AOPA

Long-Term TFRs and Charting

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RTCA Tactical Operations Committee effort Benefits of Charting Long-Term TFRs on Sectional/TAC



- **±** Increase awareness/avoidance
- **±** Long-term areas that are part-time already charted
- + Human factors/user-friendliness
- **+** NOTAMs will still be published not changing NOTAM/TFR policy
- **±** Sectionals/TAC used by non-IFR pilots (most likely to not be talking to ATC)
- **±** Base maps for many aviation apps



Long-term TFRs should be charted on Sectional and Terminal Area Charts

- ★ Several long-term TFRs are already charted
 - **±** Kennedy Space Center
 - **±** Camp David

 - **+** Washington, DC

Grand Forks AFB (UAS)

- In place for years, activated routinely
- + Consistent area of depiction
- Complicated shape
 - + Plot 12 points and an arc
 - **±** Three separate areas

FDC 6/3025 ZMP PART 1 OF 3 ND., AIRSPACE GRAND FORKS AFB, ND., TEMPORARY FLIGHT RESTRICTIONS, JULY 17, 2016 LOCAL, PURSUANT TO 49 USC 40103(B), THE FEDERAL AVIATION ADMINISTRATION (FAA) CLASSIFIES THE AIRSPACE DEFINED IN THIS NOTAM AS 'NATIONAL DEFENSE AIRSPACE'. ANY PERSON WHO KNOWINGLY OR WILLFULLY VIOLATES THE RULES CONCERNING OPERATIONS IN THIS AIRSPACE MAY BE SUBJECT TO CERTAIN CRIMINAL PENALTIES UNDER 49 USC 46307. PILOTS WHO DO NOT ADHERE TO THE FOLLOWING PROCEDURES MAY BE INTERCEPTED, DETAINED AND INTERVIEWED BY LAW ENFORCEMENT/SECURITY PERSONNEL. PURSUANT TO TITLE 14 CFR SECTION 99.7, SPECIAL SECURITY INSTRUCTIONS, ALL AIRCRAFT FLIGHT OPERATIONS ARE PROHIBITED WITHIN AN AREA DEFINED AS 480100N0972331W (GFK285009.1) TO 475430N0972331W (GFK243008.8) TO 475430N0972701W (GFK246011) TO 480100N0972701W (GFK280011.3) TO THE POINT OF ORIGIN SFC-2400FT MSL EFFECTIVE 1607170500 UTC (0000 LOCAL 07/17/16) UNTIL 1607180459 UTC (2359 LOCAL 07/17/16). 1607170500-1607180459 END PART 1 OF 3 FDC 6/3025 ZMP PART 2 OF 3 ND..AIRSPACE GRAND FORKS AFB, ND..TEMPORARY FLIGHT WITHIN AN AREA DEFINED AS 480840N0972230W (GFK317013.7) TO 474640N0972230W (GFK207013.1) THEN CLOCKWISE ON A 11 NM ARC CENTERED ON 475740N0972230W (GFK264007.7) TO THE POINT OF ORIGIN 2400FT MSL-FL180 EFFECTIVE 1607170500 UTC (0000 LOCAL 07/17/16) UNTIL 1607180459 UTC (2359 LOCAL 07/17/16). WITHIN AN AREA DEFINED AS 475743N0973834W (GFK263018.4) THEN COUNTERCLOCKWISE ON A 11 NM ARC CENTERED ON 475740N0972230W (GFK264007.7) TO 475011N0973420W (GFK237017.2) TO 473527N0981500W (DVL132041.3) TO 474500N0981500W (DVL122034.6) TO THE POINT OF ORIGIN 9500FT MSL-FL180 EFFECTIVE 1607170500 UTC (0000 LOCAL 07/17/16) UNTIL 1607180459 UTC (2359 LOCAL 07/17/16). EXCEPT AS SPECIFIED BELOW AND/OR UNLESS AUTHORIZED BY ATC: 1607170500-1607180459 END PART 2 OF 3 FDC 6/3025 ZMP PART 3 OF 3 ND., AIRSPACE GRAND FORKS AFB. ND..TEMPORARY FLIGHT 1. ALL AIRCRAFT ENTERING OR EXITING THE TFR MUST BE ON A DISCRETE CODE ASSIGNED BY AN AIR TRAFFIC CONTROL (ATC) FACILITY. 2. AIRCRAFT MUST BE SQUAWKING THE DISCRETE CODE AT ALL TIMES WHILE IN THE TFR. 3. ALL AIRCRAFT ENTERING OR EXITING THE TFR MUST REMAIN IN TWO-WAY RADIO COMMUNICATIONS WITH ATC. 4. MINNEAPOLIS CENTER, PHONE 651-463-5580, IS THE FAA COORDINATION FACILITY. 1607170500-1607180459 END PART 3 OF 3







Long-term TFRs should be identified using standardized criteria

- 1. It will be necessary to issue a TFR for this airspace in the foreseeable future.
 - A. Foreseeable future is considered to be at least two sectional chart cycles or 12 months.
- 2. The flight restriction will be consistently defined with the same lateral limits.
- 3. Flight restrictions will impact the airspace:
 - A. At least 30 separate days of the year; or
 - B. The airspace is subject to routine TFR issuance (i.e., Camp David, Kennedy Space Center).
- **★** Do not chart those VIP TFR's impacting metroplex areas (e.g., NYC, LA)
- **±** Exceptions dictate that the FAA discuss the projected TFR need and long-term plan with the TFR proponent prior to charting the TFR area



The FAA should retain the issuance process for long-term TFR NOTAMs, regardless of part-time or full time activation, even after that TFR NOTAM has been charted

- **★** Flight Service must still brief TFRs
- **TACK** NOTAMs are still important intervention



The FAA should standardize the charting requirement documents for TFRs to ensure consistency and to reduce pilot confusion

± Lack of standardization for charting TFRs

The following depiction standards for Sectional and Terminal Area Charts are suggested:

- 1. Utilize Disney Land/Disney World charting standard (embraces Volpe recommendation; similar to Part 93 areas).
- 2. Depict TFR altitude floor and ceiling in MSL similar to Class C airspace (Volpe recommendation).
- 3. Sustain the TFR note inclusion with reminder for the pilot to check NOTAMs.
- 4. For multiple TFRs in the same area, or multiple areas within the same TFR, delineate the different areas and provide the altitude floor and ceiling for each area. We recommend utilizing the same solid blue line used for the boundary to define the different individual areas.
- 5. If a long-term TFR area has inconsistent altitude restrictions but consistent lateral dimensions (e.g., Grand Forks AFB), do not depict the altitudes on the chart, but include within the TFR a note stating that impacted altitudes vary and to check NOTAMs.



Disney Land and Disney World

3.9.4.26 Special Security Notice Permanent Continuous Flight Restriction Areas

Special Security Notice Permanent Continuous Flight Restriction Areas shall be outlined as illustrated in **Appendix 7**. Within the charted area, mask the hypsometric tint, and screen the city tint by 20%.

Boxed notes shall be shown when requested by appropriate authority.

Figure 3.48 Special Security Notice Permanent Continuous Flight Restriction Area





SPECIAL SECURITY NOTICE PERMANENT CONTINUOUS FLIGHT RESTRICTION AREAS						
Boundary Lineweight		.015*				
Text Box Lineweight	C/L	7 pt Helvetica 65 Medium .030"	DISNEYLAND THEME PARK See Note for requirements			

Kennedy Space Center

3.9.4.15 Space Operations Areas (FAR 91.143)

Boundaries of space operations areas shall be shown with a continuous blue line. The outlined area shall contain a blue screen. Show the following note in the area:

Figure 3.39 Space Operations Areas Note (FAR 91.143)

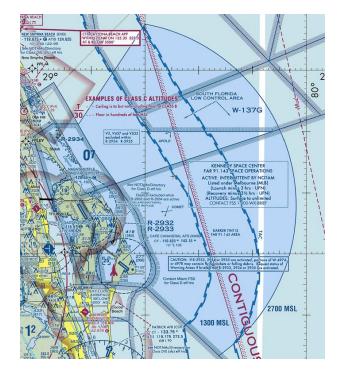
DARKER TINT IS FAR 91.143 AREA

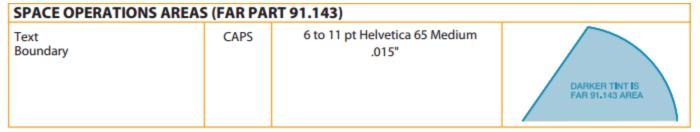
Type shall be 6 to 11 point, dependent upon space limitations.

When space operations areas are depicted on an inset, a note on the main chart body should direct users to the inset.

Figure 3.40 Space Operations Area 'See Inset' Note

See (NAME) Inset for FAR 91.143 Space Operations





Camp David

3.9.4.23 National Security Temporary Flight Restriction (TFR) Areas

National Security Temporary Flight Restriction (TFR) Areas shall be outlined as in **Appendix 7**. Within the charted area, mask the hypsometric tint.

Figure 3.45 National Security Temporary Flight Restriction (TFR) Areas

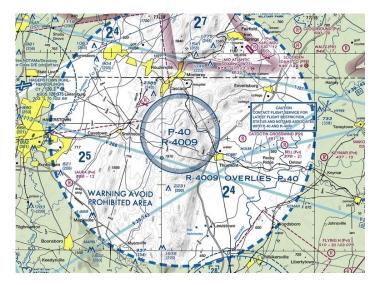


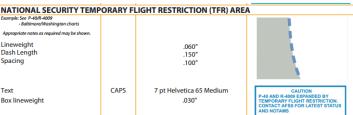
Appropriate boxed notes may be shown. Chart the boxed TFR notes with shaded relief, hypsometric, hydrographic and city tints masked. A TFR may have a leader line from the boxed note to the TFR area as necessary to call attention to it.

When a TFR is too small to adequately depict the TFR symbol, then all shaded relief, hypsometric, hydrographic and city tints shall masked, leaving the entire area void of color while retaining line features. If a TFR qualifies for complete shaded relief, hypsometric, hydrographic and city tint masking, a leader shall be used from the boxed note to the TFR area.

The cartographer shall be responsible for determining when a TFR shall qualify for shaded relief, hypsometric, hydrographic and city tint masking. Any TFR without symbology must have a leader from the boxed note to the TFR area.

If a Terminal Area Chart (TAC) has an associated Flyway Planning Chart, then TFR symbology must be used on the Flyway Planning Chart regardless of the size of the TFR.







The FAA should modernize the Sectional and Terminal Area Chart production process to achieve a 56-day charting cycle

- ★ Automated, electronic chart production for Sectional and Terminal Area Charts allows reduced time between publication cycles
- + Facilitate "data driven" charting, layering

Recommendations 6, 7, and 8

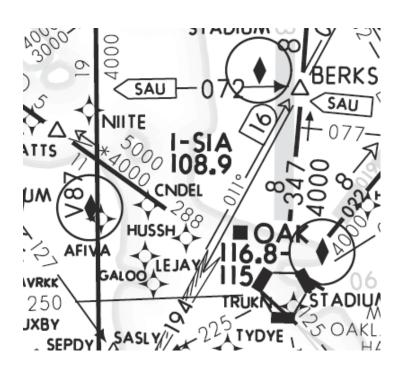


The FAA should make sporting event venues and their 3NM radius lateral rings available on controller charts

The FAA should depict sporting event venues with over 30,000 seats on ATC radar maps

The FAA should depict long-term TFRs on ATC radar maps

- **★** NATCA request supported by committee
- Facilitates standardization and consistency



AOPA

Air Traffic Services 202-509-9515

Rune.duke@aopa.org

Thank you!

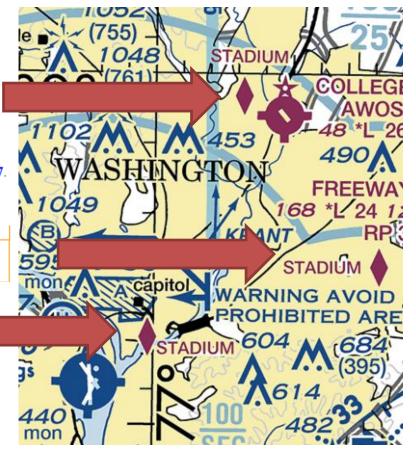
Sporting Event TFR

3.9.4.27 Sporting Event Temporary Flight Restriction Sites

Sporting Event Temporary Flight Restriction Sites shall be shown as illustrated in Appendix 7.

SPORTING EVENT TEMPORARY FLIGHT RESTRICTION SITES

Text	CAPS	5.5 pt Helvetica 65 Medium	♦ STADIUM



FDC 6/2539 Corpus Christi NAS (UAS)

- In place for years, activated routinely
- Consistent area of depiction
- Complicated shape
 - ≠ Plot 10 points and a circle
 - + Three separate areas (broken into four sections in text)

FDC 6/2539 ZHU PART 1 OF 3 TX..AIRSPACE CORPUS CHRISTI, TX..TEMPORARY FLIGHT RESTRICTIONS. JULY 14-15, 2016 LOCAL. PURSUANT TO 49 USC 40103(B), THE FEDERAL AVIATION ADMINISTRATION (FAA) CLASSIFIES THE AIRSPACE DEFINED IN THIS NOTAM AS 'NATIONAL DEFENSE AIRSPACE'. ANY PERSON WHO KNOWINGLY OR WILLFULLY VIOLATES THE RULES CONCERNING OPERATIONS IN THIS AIRSPACE MAY BE SUBJECT TO CERTAIN CRIMINAL PENALTIES UNDER 49 USC 46307. PILOTS WHO DO NOT ADHERE TO THE FOLLOWING PROCEDURES MAY BE INTERCEPTED, DETAINED AND INTERVIEWED BY LAW ENFORCEMENT/SECURITY PERSONNEL. PURSUANT TO TITLE 14 CFR SECTION 99.7, SPECIAL SECURITY INSTRUCTIONS, ALL AIRCRAFT FLIGHT OPERATIONS ARE PROHIBITED WITHIN AN AREA DEFINED AS 273437N0970631W (NGP117011.9) TO 272805N0965740W (NGP120022.1) TO 271920N0970300W (NGP143025.4) TO 272045N0970520W (NGP146023.1) TO 272621N0971113W (NGP153015.9) TO THE POINT OF ORIGIN 2500FT MSL-FL180 EFFECTIVE 1607141400 UTC (0900 LOCAL 07/14/16) UNTIL 1607150730 UTC (0230 LOCAL 07/15/16). WITHIN AN AREA DEFINED AS 273819N0971032W TO 273437N0970631W TO 1607141400-1607150730 END PART 1 OF 3 FDC 6/2539 ZHU PART 2 OF 3 TX..AIRSPACE CORPUS CHRISTI, TX..TEMPORARY FLIGHT 273200N0970800W TO 273620N0971218W TO 273611N0971209W TO THE POINT OF ORIGIN 1500FT MSL-3500FT MSL EFFECTIVE 1607141400 UTC (0900 LOCAL 07/14/16) UNTIL 1607150730 UTC (0230 LOCAL 07/15/16). WITHIN AN AREA DEFINED AS 7NM RADIUS OF 274111N0971741W OR THE NGP VORTAC SFC-3000FT MSL EFFECTIVE 1607141400 UTC (0900 LOCAL 07/14/16) UNTIL 1607150730 UTC (0230 LOCAL 07/15/16). EXCEPT AS SPECIFIED BELOW AND/OR UNLESS AUTHORIZED BY ATC: 1. ALL AIRCRAFT ENTERING OR EXITING THE TFR MUST BE ON A DISCRETE CODE ASSIGNED BY AN AIR TRAFFIC CONTROL (ATC) FACILITY. 2. AIRCRAFT MUST BE SQUAWKING THE DISCRETE CODE AT ALL TIMES WHILE IN THE TFR. 1607141400-1607150730 END PART 2 OF 3 FDC 6/2539 ZHU PART 3 OF 3 TX..AIRSPACE CORPUS CHRISTI, TX..TEMPORARY FLIGHT 3. ALL AIRCRAFT ENTERING OR EXITING THE TFR MUST REMAIN IN TWO-WAY RADIO COMMUNICATIONS WITH ATC. 4. HOUSTON CENTER, PHONE 281-230-5560, IS THE FAA COORDINATION FACILITY. 1607141400-1607150730 END PART 3 OF 3





FDC 6/3017 Beale AFB (UAS)

- In place for years, activated routinely
- **±** Consistent area of depiction
- Same area as Beale AFB Class C airspace

FDC 6/3017 ZOA PART 1 OF 2 CA..AIRSPACE BEALE AFB, CA..TEMPORARY FLIGHT RESTRICTIONS. JULY 10-17, 2016 LOCAL. PURSUANT TO 49 USC 40103(B), THE FEDERAL AVIATION ADMINISTRATION (FAA) CLASSIFIES THE AIRSPACE DEFINED IN THIS NOTAM AS 'NATIONAL DEFENSE AIRSPACE'. ANY PERSON WHO KNOWINGLY OR WILLFULLY VIOLATES THE RULES CONCERNING OPERATIONS IN THIS AIRSPACE MAY BE SUBJECT TO CERTAIN CRIMINAL PENALTIES UNDER 49 USC 46307. PILOTS WHO DO NOT ADHERE TO THE FOLLOWING PROCEDURES MAY BE INTERCEPTED. DETAINED AND INTERVIEWED BY LAW ENFORCEMENT/SECURITY PERSONNEL. PURSUANT TO TITLE 14 CFR SECTION 99.7, SPECIAL SECURITY INSTRUCTIONS, ALL AIRCRAFT FLIGHT OPERATIONS ARE PROHIBITED WITHIN AN **AREA DEFINED AS 10NM RADIUS OF 390803N1212615W (MYV055006.7)** 4100FT MSL-FL180 EFFECTIVE 1607102200 UTC (1500 LOCAL 07/10/16) UNTIL 1607172159 UTC (1459 LOCAL 07/17/16). 1607102200-1607172159 END PART 1 OF 2 FDC 6/3017 ZOA PART 2 OF 2 CA..AIRSPACE BEALE AFB, CA..TEMPORARY FLIGHT EXCEPT AS SPECIFIED BELOW AND/OR UNLESS AUTHORIZED BY ATC: 1. ALL AIRCRAFT ENTERING OR EXITING THE TFR MUST BE ON A DISCRETE CODE ASSIGNED BY AN AIR TRAFFIC CONTROL (ATC) FACILITY. 2. AIRCRAFT MUST BE SOUAWKING THE DISCRETE CODE AT ALL TIMES WHILE IN THE TER. 3. ALL AIRCRAFT ENTERING OR FXITING THE TER MUST REMAIN IN TWO-WAY RADIO COMMUNICATIONS WITH ATC. 4. NORTHERN CALIFORNIA TRACON, PHONE 916-366-4080, IS THE FAA COORDINATION FACILITY. 1607102200-1607172159 END PART 2 OF 2





FDC 6/4292 Libby AAF (UAS)

- **+** Consistent location
- Includes VFR reporting point (North Y)
- + Awkward shape

FDC 6/4292 ZAB PART 1 OF 2 AZ..AIRSPACE LIBBY AAF, AZ..TEMPORARY FLIGHT RESTRICTIONS. JULY 15-16, 2016 LOCAL. PURSUANT TO 49 USC 40103(B), THE FEDERAL AVIATION ADMINISTRATION (FAA) CLASSIFIES THE AIRSPACE DEFINED IN THIS NOTAM AS 'NATIONAL DEFENSE AIRSPACE'. ANY PERSON WHO KNOWINGLY OR WILLFULLY VIOLATES THE RULES CONCERNING OPERATIONS IN THIS AIRSPACE MAY BE SUBJECT TO CERTAIN CRIMINAL PENALTIES UNDER 49 USC 46307. PILOTS WHO DO NOT ADHERE TO THE FOLLOWING PROCEDURES MAY BE INTERCEPTED, DETAINED AND INTERVIEWED BY LAW ENFORCEMENT/SECURITY PERSONNEL. PURSUANT TO TITLE 14 CFR SECTION 99.7, SPECIAL SECURITY INSTRUCTIONS, ALL AIRCRAFT FLIGHT OPERATIONS ARE PROHIBITED WITHIN AN AREA DEFINED AS 313416N1101130W TO 313414N1103014W THEN CLOCKWISE ON A 8 NM ARC CENTERED ON 313415N1102052W TO THE POINT OF ORIGIN 9000FT MSL-FL180 EFFECTIVE 1607160600 UTC (2300 LOCAL 07/15/16) UNTIL 1607161130 UTC (0430 LOCAL 07/16/16). 1607160600-1607161130 END PART 1 OF 2 FDC 6/4292 ZAB PART 2 OF 2 AZ..AIRSPACE LIBBY AAF, AZ..TEMPORARY FLIGHT EXCEPT AS SPECIFIED BELOW AND/OR UNLESS AUTHORIZED BY ATC: 1. ALL AIRCRAFT ENTERING OR EXITING THE TFR MUST BE ON A DISCRETE CODE ASSIGNED BY AN AIR TRAFFIC CONTROL (ATC) FACILITY. 2. AIRCRAFT MUST BE SQUAWKING THE DISCRETE CODE AT ALL TIMES WHILE IN THE TFR. 3. ALL AIRCRAFT ENTERING OR EXITING THE TFR MUST REMAIN IN TWO-WAY RADIO COMMUNICATIONS WITH ATC. 4. ALBUQUERQUE ARTCC, TELEPHONE 505-856-4500, IS THE FAA COORDINATION FACILITY, 1607160600-1607161130 END PART 2 OF 2

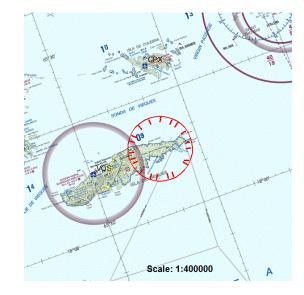


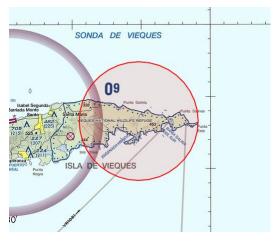


FDC 6/1484 Vieques, Puerto Rico Naval Training Range (UXO)

- - → Per AJV-11 "due to the amount of cleanup required a CFA would add additional timeline to the overall project. Admittedly it is lengthy but stopping and starting of the area would significantly lengthen the overall duration."
- **+** Consistent location

FDC 6/1484 ZSU PR..AIRSPACE VIEQUES, PUERTO RICO..TEMPORARY FLIGHT RESTRICTIONS WI AN <u>AREA DEFINED AS 4.1 NM RADIUS OF 180818N0652012W (ST THOMAS VOR/DME STT244022.1</u>. SFC-5000FT EXPLOSIVE DEMOLITION. FURA AIRCRAFT ARE AUTHORIZED IN AIRSPACE. PURSUANT TO 14 CFR SECTION 91.137(A)(1) TEMPORARY FLIGHT RESTRICTIONS ARE IN EFFECT. ONLY RELIEF AIRCRAFT OPERATIONS UNDER DIRECTION OF CH2M HILL ARE AUTHORIZED IN THE AIRSPACE. CH2M HILL TELEPHONE 787-420-9749 IS IN CHARGE OF ON SCENE EMERGENCY RESPONSE ACTIVITY. SAN JUAN /ZSU/ CERAP TELEPHONE 787-253-8664 IS THE FAA COORDINATION FACILITY. MONFRI 1200-2200 1601181200-1701312200





FDC 9/2934 Dallas, TX (President Bush)

- In place and active until further notice
- Consistent location

FDC 9/2934 ZFW TX.. FLIGHT RESTRICTION. DALLAS, TEXAS. PURSUANT TO 49 USC 40103(B), THE FEDERAL AVIATION ADMINISTRATION (FAA) CLASSIFIES THE AIRSPACE DEFINED IN THIS NOTAM AS 'NATIONAL DEFENSE AIRSPACE'. ANY PERSON WHO KNOWINGLY OR WILLFULLY VIOLATES THE RULES CONCERNING OPERATIONS IN THIS AIRSPACE MAY BE SUBJECT TO CERTAIN CRIMINAL PENALTIES UNDER 49 USC 46307. PILOTS WHO DO NOT ADHERE TO THE FOLLOWING PROCEDURES MAY BE INTERCEPTED, DETAINED AND INTERVIEWED BY LAW ENFORCEMENT/SECURITY PERSONNEL. PURSUANT TO TITLE 14, SECTION 91.141 OF THE CODE OF FEDERAL REGULATIONS, AIRCRAFT FLIGHT OPERATIONS ARE PROHIBITED WITHIN THE FOLLOWING AREA(S) UNLESS OTHERWISE AUTHORIZED BY ATC <u>WITHIN A 1 NMR OF</u> 325321N/0964835W OR THE CVE085004.8 UP TO AND INCLUDING 1500 FT AGL EFFECTIVE IMMEDIATELY UNTIL FURTHER NOTICE.



FDC 9/3124 Wilmington, DE (Vice President Biden)

- Consistent location

FDC 9/3124 ZDC DE.. FLIGHT RESTRICTION GREENVILLE/WILIMNGTON, DE. PURSUANT TO 49 USC 40103(B), THE FEDERAL AVIATION ADMINISTRATION (FAA) CLASSIFIES THE AIRSPACE DEFINED IN THIS NOTAM AS 'NATIONAL DEFENSE AIRSPACE'. ANY PERSON WHO KNOWINGLY OR WILLFULLY VIOLATES THE RULES CONCERNING OPERATIONS IN THIS AIRSPACE MAY BE SUBJECT TO CERTAIN CRIMINAL PENALTIES UNDER 49 USC 46307. PILOTS WHO DO NOT ADHERE TO THE FOLLOWING PROCEDURES MAY BE INTERCEPTED, DETAINED AND INTERVIEWED BY LAW ENFORCEMENT/SECURITY PERSONNEL. PURSUANT TO TITLE 14, SECTION 91.141 OF THE CODE OF FEDERAL REGULATIONS, AIRCRAFT FLIGHT OPERATIONS ARE PROHIBITED WITHIN THE FOLLOWING AREA(S) UNLESS OTHERWISE AUTHORIZED BY ATC WITHIN A 1 NMR OF 394605N/0753704W OR THE DQ0005005.4 UP TO AND INCLUDING 1500 FT AGL EFFECTIVE IMMEDIATELY UNTIL FURTHER NOTICE.

